

Title (en)
SYSTEMS FOR CROSS-LINKING TREATMENTS OF AN EYE

Title (de)
SYSTEME ZUR BEHANDLUNG VON AUGEN DURCH VERNETZUNG

Title (fr)
SYSTÈMES DE TRAITEMENTS D'UN OEIL PAR RÉTICULATION

Publication
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Application
EP 22204234 A 20160427

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Abstract (en)

A corneal treatment system includes an illumination system configured to deliver photoactivating light to a cross-linking agent applied to a cornea. The system includes a controller that receives input relating to a desired biomechanical change in the cornea and executes program instructions to: (i) determine, from a photochemical kinetic model, a three-dimensional distribution of cross-links for the cornea to achieve the desired biomechanical change in the cornea, where the photochemical kinetic model calculates the distribution of cross-links based on cross-linking from (A) reactions involving reactive oxygen species (ROS) including at least peroxides, superoxides, and hydroxyl radicals, and (B) reactions not involving oxygen; and (ii) determine at least one set of treatment parameters to achieve the distribution of cross-links. The at least one set of treatment parameters includes illumination parameters for the delivery of the photoactivating light. The illumination system delivers the photoactivating light according to the illumination parameters.

IPC 8 full level
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CPC (source: EP KR US)
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Citation (search report)

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US 10350111 B2 20190716; US 2016310319 A1 20161027; CN 107205845 A 20170926; CN 107205845 B 20200331; EP 3212140 A1 20170906; EP 3212140 A4 20180801; EP 3212140 B1 20211201; EP 3367983 A1 20180905; EP 3367983 A4 20190731; EP 3367983 B1 20221207; EP 4241748 A2 20230913; EP 4241748 A3 20231011; JP 2017532180 A 20171102; JP 6644799 B2 20200212; KR 102416876 B1 20220705; KR 102545628 B1 20230620; KR 20170074967 A 20170630; KR 20220098291 A 20220711; US 11219553 B2 20220111; US 2019336336 A1 20191107; US 2022151830 A1 20220519; WO 2016069628 A1 20160506; WO 2017074500 A1 20170504

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US 201615140184 A 20160427; CN 201580071255 A 20151027; EP 15855328 A 20151027; EP 16860413 A 20160427; EP 22204234 A 20160427; JP 2017540986 A 20151027; KR 20177014080 A 20151027; KR 20227022431 A 20151027; US 2015057628 W 20151027; US 2016029559 W 20160427; US 201916511500 A 20190715; US 202117509337 A 20211025